

REMARKS

Claims 1-6 are all the claims pending in the application.

Claim Rejections Under 35 U.S.C. § 112, 2nd Paragraph, Indefiniteness

At paragraph 3 of the Office Action, the Examiner stated that claims 1-6 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1. Claim 1 recites component A as: “arylene.”

The Examiner stated that it is “not clear as to what exactly applicants want to claim. Is it 6-membered ring with 1, or 2 or 3 double bond(s) or Benzene ring-CH=CH₂?”

In response, Applicants note that a person skilled in the art would understand the usual meaning of the term “arylene,” which is well known in the art.

The International Union of Pure and Applied Chemistry (IUPAC) standard chemical terminology is accepted worldwide. The IUPAC defines “arylene groups” as “bivalent groups derived from arenes by removal of a hydrogen atom from two ring carbons.” Please see enclosed with this Amendment a copy of the IUPAC web page containing this definition. In the present specification, there is a similar description of “arylene” at page 9, lines 1-4. In addition, representative arylene groups (“1,2-phenylene” and “1,4phenylene”) are described at page 9, lines 11-12. Because “arylene” has not been given a special meaning in the description, Applicants are entitled to rely on the usual meaning of the term.

Thus, Applicants submit that the subject matter claimed under the term “arylene” is clear, because the standard meaning of the term is not only well known in the art, but also described in

the specification. Applicants therefore respectfully request reconsideration and withdrawal of the rejection.

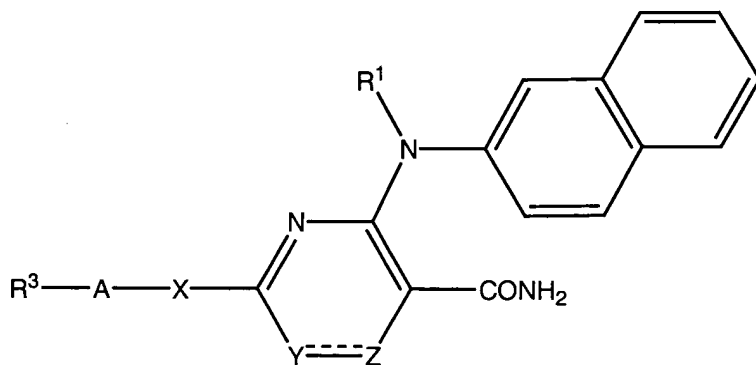
2. Claim 1 recites component R² as: “-(CH=CH-CH=CH)-”.

The Examiner stated that because R² is a substituent onto the phenyl ring, the valence of the end carbon is not fully satisfied.

In response, Applicants note that “-(CH=CH-CH=CH)-” is not meant to be the group “-CH=CH-CH=CH₂,” but rather is meant to indicate a naphthyl group that is formed between the group and the benzene ring. As stated in the specification at page 35, lines 17-19, a compound in which R² is 3,4 -(CH=CH-CH=CH)- represents a 2-naphthyl group together with the adjacent benzene ring.

Because each of the end carbons is attached to the phenyl ring, the valence of both is fully satisfied.

Please refer to the diagram below, wherein R² is a naphthyl group:



3. Claim 1 recites component A as: "heteroarylene."

The Examiner stated that it is very difficult to interpret the claim as recited, because the nature of heteroarylene, i.e. the nature and number of heteroatoms, size of the ring, number of rings, and the exact point of contact with carbon atom(s) (where applicable) on either side of -A-, is not disclosed.

In response, Applicants include herewith an amendment to the claims such that the heteroarylene in claim 1 is described as "a heteroarylene comprising a five- to six-membered monocyclic group having from 1 to 4 hetero atoms selected from O, S and N".

This definition is supported in the specification at page 9, where the "heteroarylene" is defined at lines 1-4 by referring to the "heteroaryl group," and the "heteroaryl group" is defined at lines 20-24 as a "five- to six-membered monocyclic group having from 1 to 4 hetero atoms selected from O, S and N".

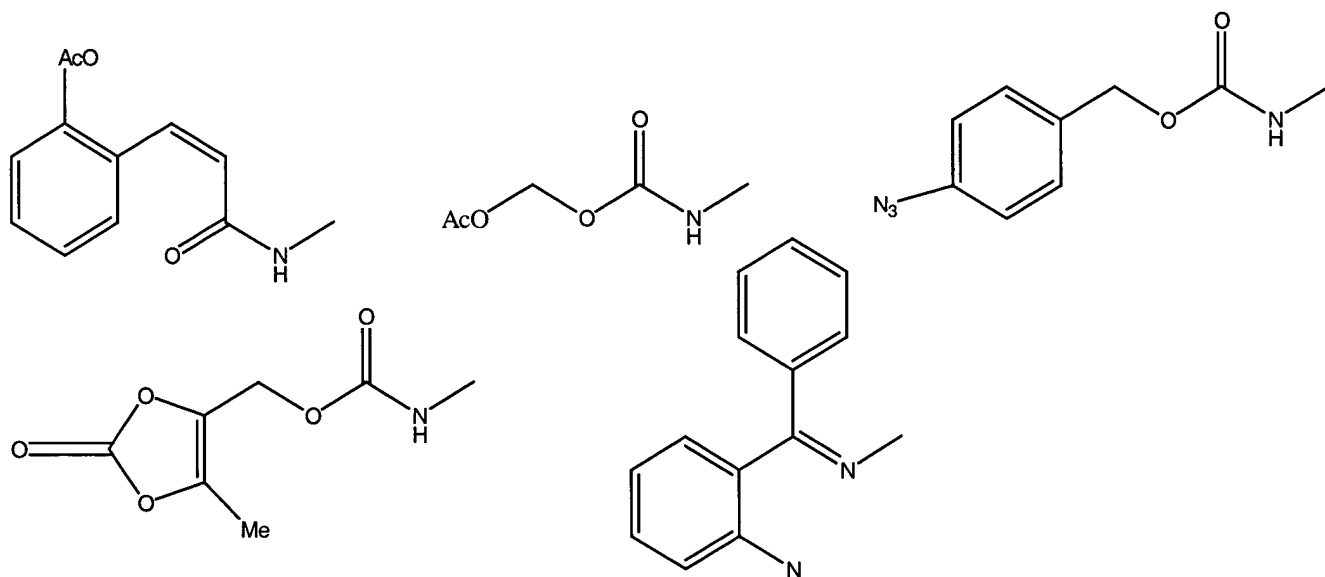
Applicants submit that under amended claim 1, the nature and number of heteroatoms, size of the ring, number of rings, and the exact position of bonding ("point of contact with carbon atom(s) on either side of -A-") is now clear. Thus, Applicants respectfully request reconsideration and withdrawal of the rejection.

4. Claim 1 recites R³ as: "-(NH₂ in a prodrug form)."

The Examiner asserted that it is not clear whether both of the H atoms, only one H atom, or none are involved in this form wherein -NH₃⁺ salt is formed.

In response, Applicants point out that when one skilled in the art judges whether a certain group constitutes a prodrug or not, he/she does not judge based on the number of hydrogen(s). Instead, as described in the specification at page 10, lines 16-17, one skilled in the art judges

based on whether the group forms -NH_2 under physiological conditions. Examples of the prodrug structures listed in the specification at page 10, lines 22-26 are shown below, from which it is apparent that specifying the number of hydrogen(s) is not an appropriate means for defining the prodrug structure:



Thus, the prodrug form is apparent to one skilled in the art, without reference to the number of hydrogen(s). Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection.

5. Claims 1-6 recite: "a salt thereof."

The Examiner required that "a salt thereof" be replaced by the phrase "a pharmaceutically acceptable salt" in claims 2-6.

In response, Applicants include herewith amendments to claims 2-6 as required by the Examiner. A similar amendment has been made to claim 1, on the assumption that the Examiner omitted claim 1 from this rejection due to an oversight.

Reconsideration and withdrawal of the objection is respectfully requested.

Allowable Subject Matter

At page 2 of the Office Action, the Examiner acknowledged Applicants' election of Group I, claims (in part) 1-6, drawn to compounds, simple compositions, and a method of use for Formula (I) of claim 1 wherein Y=Z (double bond), dated July 24, 2003. The Examiner also acknowledged Applicant's election of the species (6), X: NR⁴; Y=Z (double bond): CR⁷=N, core formed: 6-membered pyrazine, dated July 24, 2003 and clarified by telephone interview August 29, 2003.

In paragraph 8 of the Office Action, the Examiner stated that claims 1-6, related to invention of a group of compounds of Formula (I) wherein X is -NR⁴ and Y is -CR⁷ = N-, forming a 1,4-diazine i.e. pyrazine core = Group(6), would be allowable if rewritten to overcome the rejections set forth in the Office Action and if the claims are limited to the elected species.

In response, Applicants include herewith amendments to claims 1 and 4, to limit the claims to the elected species. In addition, claim 3 has been cancelled, because when limited to the elected species claim 3 no longer further limits claim 2.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

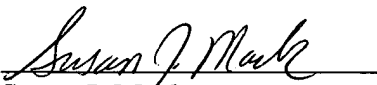
Respectfully submitted,

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